

In the claims

1. A method of dynamically allocating available audio still video (ASV) buffer memory space in an ASV buffer for a current pack in a DVD audio bitstream, comprising:
 - (a) determining a pack type of the current pack;
 - (b) updating an ASV table with a pointer corresponding to an available memory location in the ASV buffer memory space; and
 - (c) concurrently with the updating, storing a current payload associated with the current pack to the available memory location.
2. The method as recited in claim 1, further comprising:
 - when the current pack is not a last pack in the bitstream, then repeating (a) - (c) for a next pack in the bitstream.
3. A method as recited in claim 1, wherein the pack type is selected from a group comprising: a highlight pack, a subpicture pack, a video pack, and a pgm_end pack.
4. The method as recited in claim 1, where the updating comprises:
 - incrementing a current pack counter;
 - computing a next ASV memory write address based upon the incremented pack counter; and
 - determining a next pack type based upon the current pack type.
5. The method as recited in claim 4, wherein the determining a next pack type comprises:

if the current pack type is the pgm_end pack type, then

updating an ASV counter; and
updating a highlight pack buffer counter.

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6. The method as recited in claim 4, wherein the determining a next pack type comprises:

10 if the current pack type is the highlight pack type, then
updating a subpicture buffer; and
updating a video buffer.

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7. The method as recited in claim 4, wherein the determining a next pack type comprises:

20 if the current pack type is the subpicture pack type, then
updating a video buffer counter.

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8. The method as recited in claim 1, where in the ASV memory buffer is a SDRAM memory.

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9. The method as recited in claim 1, wherein the ASV buffer is included in a universal DVD-A/V player unit.

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10. The method as recited in claim 9, further comprising:

40 (v) defining an ASV frame;

(x) retrieving the ASV frame; and

(y) displaying the ASV frame on a display coupled to the DVD-A/V
player unit.

11. A method as recited in claim 10, wherein the defining comprises:

5 locating an ASV frame highlight pack, wherein the ASV frame highlight pack corresponds to a first memory space address in the ASV buffer corresponding to the ASV frame;

10 locating an ASV frame pgm_end pack, wherein the ASV frame pgm_end pack corresponds to a second memory space address in the ASV buffer corresponding to the ASV frame, wherein the first and the second memory space addresses define a portion of the ASV buffer memory space allocated to the ASV frame.

15 12. A method as recited in claim 11, wherein the locating an ASV frame highlight pack is based upon a first highlight pack pointer stored in the ASV table.

13. A method as recited in claim 12, wherein the locating an ASV frame pgm_end pack is based upon a first pgm_end pack pointer stored in the ASV table.

20 14. A method of dynamically allocating available audio still video (ASV) buffer memory space in an ASV buffer for a current pack in a DVD audio bitstream, comprising:

25 (a) determining a pack type of the current pack;

(b) updating an ASV table with a pointer corresponding to an available memory location in the ASV buffer memory space;

30 (c) concurrently with the updating, storing a current payload associated with the current pack to the available memory location;

(d) incrementing a pack counter;

35 (e) computing a next ASV memory write address based upon the incremented pack counter;

(f) determining a next pack type based upon the current pack type; and

40 (g) repeating (a) - (f) for a next pack in the bitstream when the current pack is not a last pack in the bitstream.

15. The method as recited in claim 1, wherein the pack type is selected from a group comprising: a highlight pack, a subpicture pack, a video pack, and a pgm_end pack.

16. The method as recited in claim 15, wherein the determining a next pack type comprises:

if the current pack type is the pgm_end pack type, then

updating an ASV counter;

updating a highlight pack buffer counter;

if the current pack type is the highlight pack type, then

updating a subpicture buffer;

updating a video buffer; and

if the current pack type is the subpicture pack type, then

updating a video buffer counter.

17. The method as recited in claim 14, where in the ASV memory buffer is a SDRAM memory.

18. The method as recited in claim 14, wherein the ASV buffer is included in a universal DVD-A/V player unit.

19. The method as recited in claim 18, further comprising:

defining an ASV frame;

retrieving the ASV frame; and

displaying the ASV frame on a display coupled to the DVD-A/V player unit.

20. A method as recited in claim 19, wherein the defining comprises:

locating an ASV frame highlight pack, wherein the ASV frame highlight pack corresponds to a first memory space address in the ASV buffer corresponding to the ASV frame;

locating an ASV frame pgm_end pack, wherein the ASV frame pgm_end pack corresponds to a second memory space address in the ASV buffer corresponding to the ASV frame, wherein the first and the second memory space addresses define a portion of the ASV buffer memory space allocated to the ASV frame.

21. A method as recited in claim 20, wherein the locating an ASV frame highlight pack is based upon a first highlight pack pointer stored in the ASV table.

22. A method as recited in claim 21, wherein the locating an ASV frame pgm_end pack is based upon a first pgm_end pack pointer stored in the ASV table.

23. An apparatus for dynamically allocating available audio still video (ASV) buffer memory space in an ASV buffer for a current pack in a DVD audio bitstream, comprising:

a means for determining a pack type of the current pack;

a means for updating an ASV table with a pointer corresponding to an available memory location in the ASV buffer memory space;

a means for concurrently with the updating, storing a current payload associated with the current pack to the available memory location;

a means for incrementing a pack counter;

a means for computing a next ASV memory write address based upon the incremented pack counter;

a means for determining a next pack type based upon the current pack type.

24. The apparatus as recited in claim 23, wherein the pack type is selected from a group comprising: a highlight pack, a subpicture pack, a video pack, and a pgm_end pack.

25. The apparatus as recited in claim 24, further comprising:

- a means for updating an ASV counter;
- a means for updating a highlight pack buffer counter;
- 5 a means for updating a subpicture buffer;
- a means for updating a video buffer; and
- 10 a means for updating a video buffer counter.

26. The apparatus as recited in claim 23, wherein the ASV buffer is included in a universal DVD-A/V player unit.

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27. The apparatus as recited in claim 26, further comprising:

- a means for defining an ASV frame;
- 20 a means for retrieving the ASV frame; and
- a means for displaying the ASV frame on a display coupled to the DVD-A/V player unit.

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28. The apparatus as recited in claim 27, wherein the defining comprises:

30 a means for locating an ASV frame highlight pack, wherein the ASV frame highlight pack corresponds to a first memory space address in the ASV buffer corresponding to the ASV frame;

35 a means for locating an ASV frame pgm_end pack, wherein the ASV frame pgm_end pack corresponds to a second memory space address in the ASV buffer corresponding to the ASV frame, wherein the first and the second memory space addresses define a portion of the ASV buffer memory space allocated to the ASV frame.

40 29. A computer program product for dynamically allocating available audio still video (ASV) buffer memory space in an ASV buffer for a current pack in a DVD audio bitstream, comprising:

computer code for determining a pack type of the current pack;

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computer code for updating an ASV table with a pointer corresponding to an available memory location in the ASV buffer memory space;

5 computer code for concurrently with the updating, storing a current payload associated with the current pack to the available memory location;

computer code for incrementing a pack counter;

10 computer code for computing a next ASV memory write address based upon the incremented pack counter;

computer code for determining a next pack type based upon the current pack type; and

15 a computer readable medium for storing the computer program product.

20 30. The computer program product as recited in claim 29, wherein the pack type is selected from a group comprising: a highlight pack, a subpicture pack, a video pack, and a pgm_end pack.

25 31. The computer program product as recited in claim 30, further comprising:

computer code for updating an ASV counter;

30 computer code for updating a highlight pack buffer counter;

computer code for updating a subpicture buffer;

35 computer code for updating a video buffer; and

computer code for updating a video buffer counter.

40 32. The computer program product as recited in claim 29, where in the ASV memory buffer is a SDRAM memory.

45 33. The computer program product as recited in claim 29, wherein the ASV buffer is included in a universal DVD-A/V player unit.

34. The computer program product as recited in claim 33, further comprising:

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computer code for defining an ASV frame;

computer code for retrieving the ASV frame; and

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computer code for displaying the ASV frame on a display coupled to the DVD-A/V player unit.

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35. A computer program product as recited in claim 34, further comprising:

computer code for locating an ASV frame highlight pack, wherein the ASV frame highlight pack corresponds to a first memory space address in the ASV buffer corresponding to the ASV frame; and

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computer code for locating an ASV frame pgm_end pack, wherein the ASV frame pgm_end pack corresponds to a second memory space address in the ASV buffer corresponding to the ASV frame, wherein the first and the second memory space addresses define a portion of the ASV buffer memory space allocated to the ASV frame.

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